Gated Recurrent Network
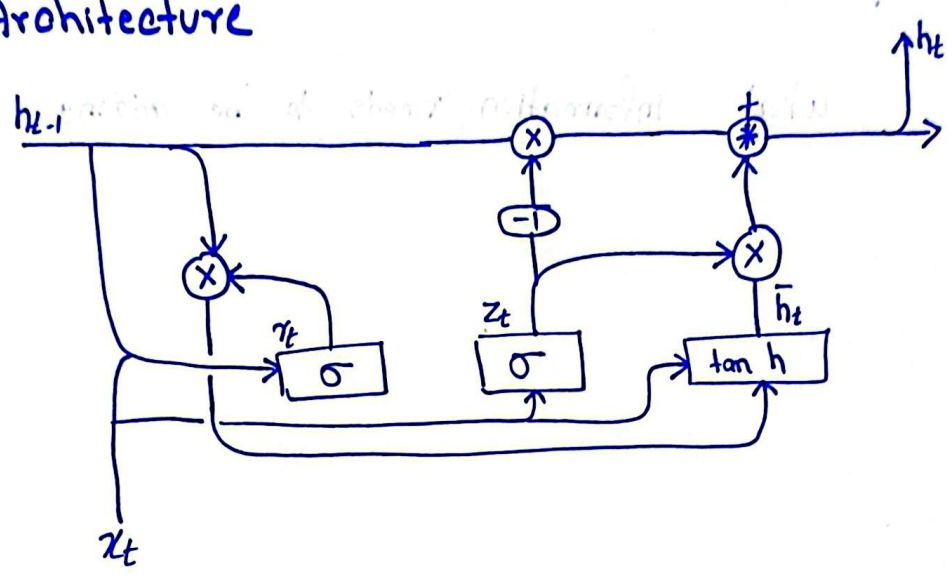
⟶ Architecture

$$Z_t = \sigma(W_z [h_{t-1}, x_t]) \implies \text{Update gate}$$

$$r_t = \sigma(w_r [h_{t-1}, x_t]) \implies \text{Reset gate}$$

$$\bar{h}_t = \tanh(W \cdot [r_t \times h_{t-1}, x_t]) \implies \text{temporary hidden state}$$

$$h_t = (1-z_t) h_{t-1} + z_t \bar{h}_t$$

~~⟶ Reset Gate~~

> Reset Gate

       Resetting some information from h_{t-1}
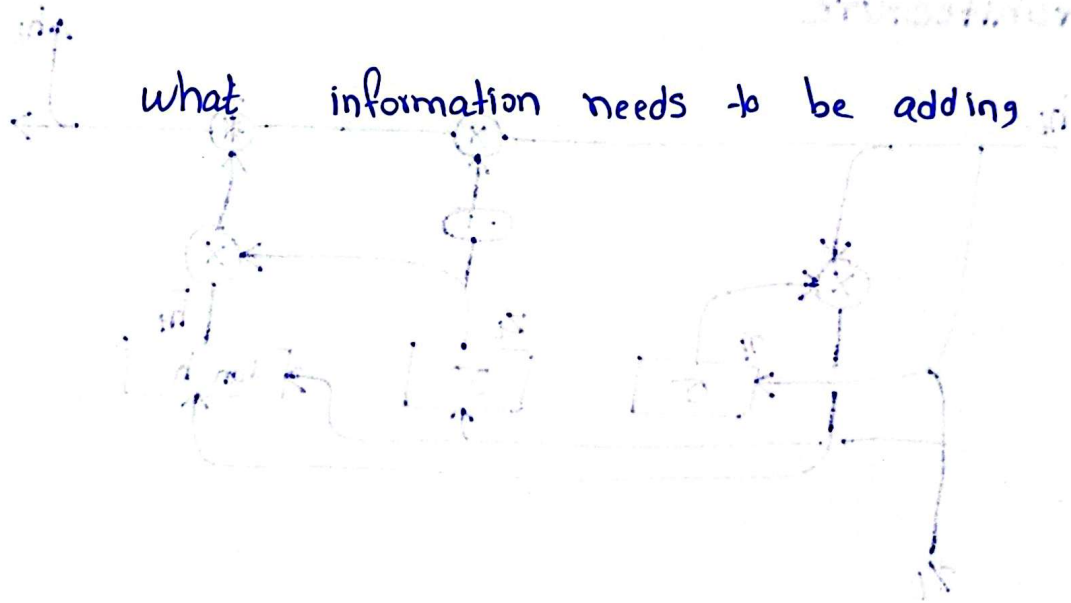
h_{t-1} $[0.6 \quad 0.5 \quad 0.3 \quad 0.9]$

ⓧ

r_t $[0.2 \quad 0.4 \quad 0.8 \quad 0.2]$

     ⇓   ⇓   ⇓   ⇓

$x_t \longrightarrow [0.12 \quad 0.20 \quad 0.24 \quad 0.18]$

> Update Gate

what information needs to be adding